UC-7410/7420 Series

RISC-based ready-to-run computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash

- Intel XScale IXP-422/425, 266/533 MHz processor
- 128 MB RAM on-board, 32 MB flash
- 8 RS-232/422/485 serial ports
- Dual 10/100 Mbps Ethernet for network redundancy
- USB 2.0 host
- CompactFlash socket for storage expansion
- PCMCIA supports WLAN, GPRS, UMTS, HSDPA
- LCM display and keypad for HMI ready-to-run Linux or WinCE 5.0 platform
- DIN-rail or wall-mount installation
- Robust, fanless design

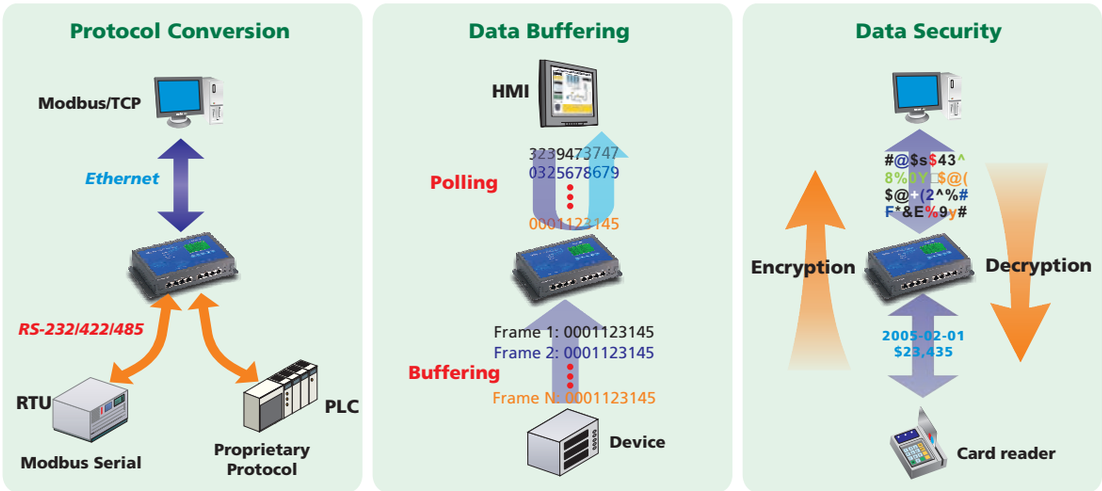
The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

Overview

The UC-7410/UC-7420 RISC-based ready-to-run Linux and WinCE computers are designed for embedded applications. The computers feature 8 RS-232/422/485 serial ports, a PCMCIA interface for wireless LAN communication, CompactFlash, and USB ports for adding external memory.

The pre-installed open-standard Linux or WinCE OS operating system environments make a convenient platform for software development. In fact, software written for a desktop PC can be ported as is to the UC-7410/UC-7420 platform using readily available development tools, and the code can be stored in the UC-7410/UC-7420's Flash memory. System integrators use the UC-7410/UC-7420 computers as part of distributed control systems based on embedded technology.

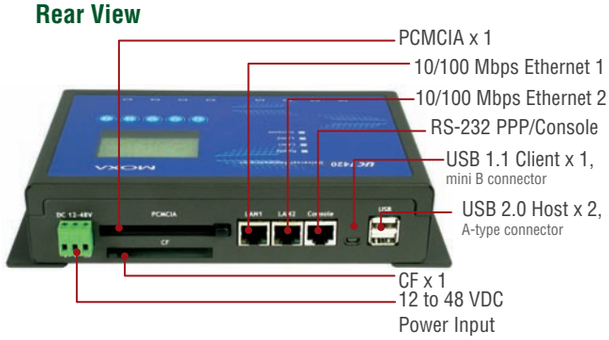
Typical Applications



Appearance

Front View

Rear View



Hardware Specifications

Computer

CPU:
UC-7400: Intel XScale IXP-422 266 MHz
UC-7400 Plus: Intel XScale IXP-425 533 MHz

OS (pre-installed): Embedded Linux or Windows CE 5.0

DRAM: 128 MB onboard (256 MB for ODM)

Flash: 32 MB onboard

PCMCIA: Cardbus card and 16-bit PCMCIA 2.1/JEIDA 4.2 card (UC-7420 only)

Storage Expansion: Full function CompactFlash x 1 (UC-7420 only)

USB: USB 2.0 hosts x 2 (UC-7420 only)

LAN Interface

Ethernet: 10/100 Mbps x 2, RJ45 connectors

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 8

Serial Standards: RS-232/422/485, software-selectable

Connectors: 8-pin RJ45

Serial Line Protection: 15 KV ESD for all signals

Console Port: RS-232, RJ45 connector, supports PPP

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, ADDC™ (automatic data direction control) for RS-485

Baudrate: 50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

LEDs

System: OS Ready x 1, Console (TxD/RxD) x 1

LAN: 10M/100M x 2

Serial: TxD, RxD (8 of each)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case, 128 x 64 dot graphics mode

Push Buttons: Five membrane buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm)

Weight:
UC-7410: 810 g
UC-7420: 875 g

Dimensions: 197 x 44 x 125 mm (7.76 x 1.73 x 4.92 in)

Mounting: DIN-Rail, wall

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 80°C (-4 to 176°F)

Anti-vibration: 1G @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1 hr/axis

Anti-shock: 5G @ IEC-68-2-27, half sine wave, 30 ms

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:
UC-7410: 830 mA @ 12 VDC (10 watts)
UC-7420: 890 mA @ 12 VDC (12 watts)

Regulatory Approvals

EMC: CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)

Safety: UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

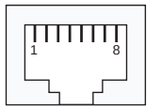
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

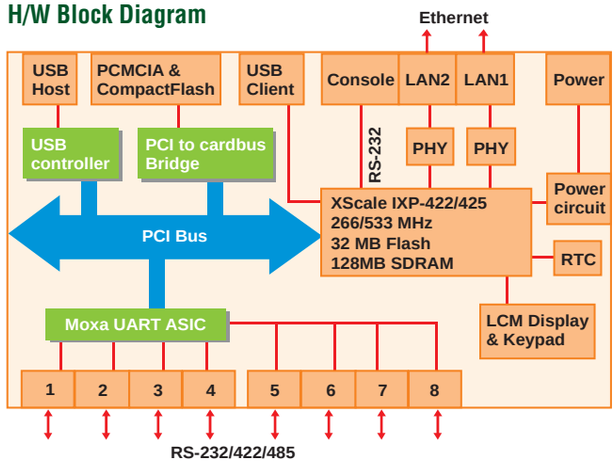
Pin Assignment

8-pin RJ45



PIN	RS-232	RS-422/RS-485-4w	RS-485
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TxD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

H/W Block Diagram



Software Specifications

Linux

Kernel Version: 2.4.18 or 2.6.10 (Plus version)

Protocol Stack: TCP, UDP, IPv4, SNMP V1, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE

File System: JFFS2 (on-board flash)

System Utilities: bash, busybox, tinylogin, telnet, ftp, scp

Supporting Services and Daemons:
telnetd: Telnet Server daemon
ftpd: FTP server daemon
sshd: Secure shell server
Apache: Web server daemon, supporting PHP and XML
OpenVPN: Virtual private network service manager
iptables: Firewall service manager
pppd: dial in/out over serial port daemon & PPPoE
snmpd: snmpd agent daemon
inetd: TCP server manager program

Application Development Environment:
Moxa Linux API Library for device control
Linux Tool Chain: Gcc, Glibc, GDB

Windows Embedded CE 5.0

System Utilities: Windows command shell, telnet, ftp, web-based administration manager

File System: FAT (on-board flash)

Protocol Stack: TCP, UDP, IPv4, SNMP, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNTP, SMTP, Telnet, FTP, PPP

Supporting Services and Daemons:
Telnet Server: Allows remote administration through a standard telnet client.
FTP Server: Used for transferring files to and from remote computer systems over a network.
Web Server (httpd): WinCE IIS, including ASP, ISAPI Secure Socket Layer support, SSL 2, SSL 3, and Transport Layer Security (TLS/SSL 3.1) public key-based protocols, and Web Administration ISAPI Extensions.
Dial-up Networking Service: RAS client API and PPP, supporting Extensible Authentication Protocol (EAP) and RAS scripting.

Application Development Environment:
Moxa WinCE 5.0 SDK
C Libraries and Run-times
Component Services (COM and DCOM)
Microsoft Foundation Classes (MFC)
Microsoft® .NET Compact Framework 2.0 SP2
XML, including DOM, XQL, XPATH, XSLT, SAX2
SOAP Toolkit
Winsock 2.2

Ordering Information

Available Models

UC-7410-LX: RISC-based IXP-422 embedded computer with 8 serial ports, dual LANs, Linux 2.4

UC-7410-LX Plus: RISC-based IXP-425 embedded computer with 8 serial ports, dual LANs, Linux 2.6

UC-7420-LX: RISC-based IXP-422 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, Linux 2.4

UC-7420-LX Plus: RISC-based IXP-425 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, Linux 2.6

UC-7410-CE: RISC-based IXP-422 embedded computer with 8 serial ports, dual LANs, WinCE 5.0

UC-7420-CE: RISC-based IXP-422 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, WinCE 5.0

Package Checklist

- UC-7410 or UC-7420 computer
- Wall mounting kit
- DIN-Rail mounting kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-RJ45F9-150: 8-pin RJ45 to DB9 female console port cable, 150 cm
- CBL-RJ45M9-150: 8-pin RJ45 to DB9 male serial port cable, 150 cm
- Universal power adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card